AMENDMENTS TO THE CLAIMS

This listing of claims will replace the prior version and listing of claims in the English translation submitted herewith:

LISTING OF CLAIMS:

1. (currently amended): An illumination~~Illumination~~ system for a microlithographic projection exposure apparatus, comprising:

a) a light source ~~(12)~~ for generating a projection light beam, and

~~b) a first objective (20) and~~

b)~~e)~~ a masking system ~~(38, 52)~~ for masking a reticle ~~(30)~~, said masking system including

i) adjustable first blades ~~(40)~~ for masking in a first ~~spatial~~ direction ~~(X)~~, wherein the first blades are arranged in or in close proximity to a first field plane ~~(36)~~, and

ii) adjustable second blades ~~(54, 56)~~ for masking in a second ~~spatial~~ direction ~~(Y)~~, wherein the second blades are arranged in or in close proximity of a second field plane ~~(44)~~ which is different from the first field plane ~~(36)~~.

2. (currently amended): The illumination~~Illumination~~ system of~~as claimed in~~ claim 1, further comprising:

a) ~~wherein the~~a first objective, which ~~(20)~~ images a first optical raster element ~~(16) arranged before the first objective (20) in the beam propagation direction~~ on the first field plane ~~(36)~~, and

b) ~~wherein the illumination system (10) further includes~~ a second objective, which is ~~(42)~~ arranged behind the first objective ~~(20)~~ in a~~the~~ beam propagation direction~~, which second objective (42)~~ and images the first field plane ~~(36)~~ on the second field plane ~~(44)~~.

3. (currently amended): The illumination~~Illumination~~ system of~~as claimed in~~ claim 2, further comprising:

a) ~~wherein~~ a second optical raster element, ~~(28)~~ which expands a transiting light beam exclusively in the first ~~spatial~~ direction ~~(X)~~ and which is arranged in the first objective ~~(20)~~, and

b) ~~wherein~~ a third optical raster element ~~(48)~~ which expands a transiting light beam exclusively in the second ~~spatial~~ direction ~~(Y)~~ and which is arranged in the second objective ~~(42)~~.

4. (currently amended): The illumination~~Illumination~~ system of~~as claimed in~~ claim 3, wherein the second optical raster element ~~(28)~~ is arranged close to a~~the~~ pupil plane within the first objective, and wherein ~~(20) and~~ the third optical raster element ~~(48)~~ is arranged close to a~~the~~ pupil plane of~~within~~ the second objective ~~(42)~~.

5. (currently amended): The illumination~~Illumination~~ system of claim 1~~as claimed in any one of the preceding claims~~, wherein~~,~~ ~~by means of~~ the first blades ~~(40)~~ and the second blades ~~(54, 56),~~ define a substantially strip-shaped light field ~~(32)~~ on the reticle, said light field having an ~~the~~ extension ~~of which is shorter~~ in the first ~~spatial~~ direction ~~(X)~~ which is shorter than an extension in the second ~~spatial~~ direction ~~(Y), is definable on the reticle (30)~~.

6. (currently amended): The illumination~~Illumination~~ system of claim 1~~as claimed in any one of the preceding claims~~, further comprising~~wherein~~ an attenuation system ~~(60)~~ for locally variable attenuation of the light intensity, wherein said attenuation system is arranged in the second field plane ~~(44)~~.

7. (currently amended): The illumination~~Illumination~~ system of claim 2~~as claimed in any one of the preceding claims~~, wherein the first objective ~~(20)~~ and the second objective ~~(42)~~ are configured so ~~designed~~ that a~~the~~ light field illuminated in the first field plane ~~(36)~~ is smaller than a~~the~~ light field illuminated in the second field plane ~~(44)~~.

8. (currently amended): The illumination~~Illumination~~ system of claim 2~~as claimed in any one of the preceding claims~~, further comprising~~wherein~~ a manipulator ~~(50)~~ arranged in the second objective for manipulating ~~the~~a pupil of~~is arranged in~~ the second objective ~~(42)~~.

9. (currently amended): The illumination~~Illumination~~ system of claim 2~~as claimed in any one of the preceding claims~~, wherein the first objective is a zoom-axicon objective ~~(20)~~ having two axicon lenses ~~(22, 24)~~ which are adjustable relative to one another.

10. (currently amended): The illumination~~Illumination~~ system of claim 2~~as claimed in any one of the preceding claims~~, ~~wherein the illumination system (10) includes~~further comprising a third objective ~~(58)~~ which images the second field plane ~~(44)~~ on a third field plane in which the reticle ~~(30)~~ is arranged.

11. (currently amended): A microlithographic~~Microlithographic~~ projection exposure apparatus for imaging structures contained in a movably arranged reticle ~~(30)~~ on a light-sensitive layer ~~(124)~~, comprising a transmission filter ~~(162)~~ having a locally varying transmissivity and being movable synchronously with movements of the reticle ~~(30)~~.

12. (currently amended): The~~Projection exposure~~ apparatus of~~as claimed in~~ claim 11, ~~wherein the projection exposure apparatus (100)~~ further ~~comprises~~comprising:

a) an illumination system ~~(110)~~ for generating a projection light beam, which illumination system ~~(110)~~ contains a light source ~~(12)~~ and an imaging optical system ~~(58)~~,

b) a first traversing system ~~(118)~~ for moving the reticle ~~(30)~~ in an image plane ~~(116)~~ of the optical system ~~(58)~~,

c) a projection lens ~~(112)~~ for imaging ~~the~~ structures contained in the reticle ~~(30)~~ on a~~the~~ light-sensitive layer ~~(124)~~,

d) a second traversing system ~~(128)~~ for moving a support~~carrier (126)~~ of the light-sensitive layer ~~(124)~~,

e) a third traversing system ~~(164)~~ for moving the transmission filter ~~(162)~~ into or close to a field plane ~~(44)~~ of the optical system, wherein said field plane is optically ~~(58)~~ conjugate to the image plane ~~(116)~~,

f) a control system ~~(130) for the traversing systems (118, 128, 164)~~ for controlling the traversing systems ~~(118, 128, 164) in~~ such ~~a way~~ that the reticle ~~(30)~~, the support ~~(126)~~ and the transmission filter ~~(162)~~ move synchronously.

13. (currently amended): The~~Projection exposure~~ apparatus of ~~as claimed in~~ claim 11 ~~or 12~~, wherein a one to one correspondence is provided between ~~to~~ each point on the transmission filter ~~(162)~~and ~~precisely one~~each point on the reticle ~~(30) is coordinated, and wherein, conversely, to each point on the reticle (30) precisely one point on the transmission filter (162) is coordinated~~.

14. (currently amended): The~~Projection exposure~~ apparatus of claim 11 ~~as claimed in any one of claims 11 to 13~~, wherein ~~the distribution of the transmissivity over a surface of~~ the transmission filter has a transmissivity distribution over its surface which is configured such ~~(162) exposed to projection~~

~~light is so defined~~ that, at least approximately, the same light energy per unit area impinges on each exposed point on the light-sensitive layer ~~(124) which is subjected to projection light as a result of the projection of the reticle (30)~~.

15. (currently amended): A method~~Method~~ for homogenizing~~homogenising~~ the light energy which impinges per unit area on a light-sensitive surface ~~(124)~~ in a microlithographic projection exposure apparatus ~~(100)~~, wherein the~~which~~ light-sensitive surface is configured to ~~(124) can~~ be arranged in an image plane ~~(122)~~ of a projection lens ~~(112)~~ of the projection exposure apparatus ~~(100)~~, said method comprising ~~the following steps~~:

a) arrangement of a light-sensitive element ~~(124)~~ in the image plane ~~(122)~~;

b) projection of a reticle ~~(30)~~ on the light-sensitive element ~~(124)~~ under the conditions under which microstructured components are to be manufactured using the reticle ~~(30)~~, in a scanning process in which the light-sensitive element ~~(124)~~ is moved synchronously with the reticle ~~(30)~~;

c) locally-resolved determination of the light energy impinging on the light-sensitive element ~~(124)~~ per unit area;

d) determination of the smallest value of light energy which has been detected in step b) for a point to be exposed on the light-sensitive element ~~(124)~~;

e) provision of a traversing system ~~(164)~~ for moving a transmission filter having a~~(162) with~~ locally varying transmissivity~~, with which traversing system (164) the transmission filter (162) can be moved~~ synchronously with traversing movements of the reticle~~(30)~~;

f) determination of the local distribution of the transmissivity of the transmission filter ~~(162) in~~ such ~~a way~~ that, during a further projection in which the transmission filter ~~(162)~~ is moved synchronously with the reticle~~(30)~~, the smallest value for the light energy impinging per unit area determined in step c) is at least approximately achieved at all points to be exposed on a light-sensitive layer ~~(124)~~ arranged in the image plane ~~(122)~~.

16. (currently amended): The method of~~Method as claimed in~~ claim 15, wherein the light-sensitive element is a measuring sensor.

17. (currently amended): The method of~~Method as claimed in~~ claim 15, wherein the light-sensitive element is a light-sensitive photoresist.

18. (currently amended): An illumination~~Illumination~~ system for a microlithographic projection exposure apparatus comprising:

a) a light source~~(12)~~,

b) a first objective ~~(20)~~ that has a first pupil plane ~~(26)~~ and includes two axicon lenses ~~(22, 24)~~ which ~~can be displaced~~ are configured to displace relative to each other,

c) a first optical raster element ~~(16)~~ which is arranged in an object plane ~~(18)~~ of the first objective ~~(20)~~,

d) a second objective ~~(28)~~ arranged in the optical path behind first objective ~~(20)~~ and imaging the first pupil plane ~~(26)~~ onto a second pupil plane ~~(30)~~, and

e) a second optical raster element ~~(32)~~ arranged in the second pupil plane ~~(30)~~.

19. (currently amended): The illumination ~~Illumination~~ system of ~~as claimed in~~ claim 18, wherein the second objective ~~(28)~~ has a magnification between approximately ~~about~~ 0.5 and approximately 2.